SLOW and ERROR: from Oslo to DC

draft-ietf-pilc-slow-02.txt and
draft-ietf-pilc-error-02.txt

Changes made to both drafts:

Two updates to each draft since Oslo:

- Version 01 - reflected comments from Oslo
- Version 02 - reflected discussions since Oslo

Both titles have changed

Both abstracts have changed

- Background now less history, more technology

Lots of editorial cleanup and minor corrections

SLOW: Significant Changes in 01

- Recommended limited receiver window
  - Goal: Prevent sender probing for non-existent bandwidth
  - Problem: “limited to WHAT?”
- Added reference to “Right-edge Recovery”
  - Inject new data when sender receives duplicate ACKs
  - Goal: Trigger Fast Retransmit/Fast Recovery if possible
  - Avoid RTO by injecting one or two ACK-clocked segments
  - Not standards-track - research community feedback?

SLOW: Significant Changes in 02

- Recommend against use of TCP timestamp options
  - Constantly-changing header option prevents header compression
  - Header compression that compresses SOME options?
- Recommend “TCP Buffer Autotuning”
  - Significant win for hosts with multiple interfaces (LAN + dialup)
  - Still recommending small receive windows for “ever-slow” hosts
- Recommend (at most) 100-millisecond MTUs
  - 200-millisecond delays are human-perceptible (RFC 1144)
  - 200-millisecond MTUs turn off delayed ACKs

ERROR: Significant Changes in 01

- Defer LINK topics to LINK
  - Still working out exact contents of each PILC recommendation!
- Restrict scope to TCP
  - Too many variables for one-size-fits-all UDP recommendation
- Remind everyone that errors still hurt TCP performance
  - No miracle occurs!
- Distinguish clearly between standards-track and non-standards-track recommendations

ERROR: Significant Changes in 02

- Complete rewrite: Why TCP windows stay small
- Split Explicit Congestion and Corruption Notification material
  - Corruption notification topic swamped by congestion notification
- Updated to include Appropriate Byte Counting recommendation
  - Research/experimentation continues in this area
- Added “HTTP and the Dark Side of the Force” section
  - The WWW has lots of small objects
  - HTTP/1.0: closed TCP connections a lot
  - HTTP/1.1: persistent connections intended to be default
  - This isn’t happening, for several reasons
  - TCPs really won’t know what network characteristics are, as long as connections keep closing

Spencer-the-co-author thinks:

Both documents are scheduled for publication as BCPs after this IETF (per our charter)

At least one more editorial pass is needed for each document (think “03”) before this happens

I’m interested if you have comments

I’m very interested if you see topics that are missing

I’m EXTREMELY interested if you see errors

Your thoughts?